25SCHOOLS

FREE LEARNING NOTES FOR ZAMBIA

GRADE 4 · TERM 3

Mathematics

Bar Graphs and Line Graphs

Lesson notes for learners · Competence-Based Curriculum

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A bar graph and a line graph show how things differ across groups. For example, we can use them to compare the number of girls and boys in a class. In this note you will collect data, put it in a frequency table and show it on a graph.

AFTER THESE NOTES YOU SHOULD BE ABLE TO

- Collect and organise data in a frequency table
- Present data on a bar graph and a line graph
- Read a graph to answer questions
- Know that a computer can be used to draw graphs

KEY WORDS

Data	Facts or numbers that we collect, such as how many animals we counted.
Tally mark	A short stroke we write for each item counted.
Frequency	How many times something appears. It is the total of the tally marks.
Bar graph	A graph that uses bars to show how many are in each group.
Line graph	A graph that joins points with a line to show the numbers.

1 Collecting data and the frequency table

To collect data, choose something to count. A group of learners can count the people wearing black in school, the number of classrooms in the school or the animals on picture cards.

Write the results in a frequency table with three columns: the type of animal, the tally marks and the frequency. For each animal you count, make one tally mark. At the end, count the marks to find the frequency.

Look at the table to see which animal has the highest number. Be ready to say why you arranged your data in that way.

Type of animal	Tally mark	Frequency
Elephant	IIII I	5
Dog	III	3
Cat	IIII	4
Chicken	IIII I	6

Figure 1. A frequency table of animals on picture cards

2 Drawing a bar graph and a line graph

Use square grid paper and crayons. On the line along the bottom (the x-axis), write the groups, for example domesticated animals and wild animals. Then paint the squares upwards, one square for each animal counted. The painted bars show how many there are in each group.

A line graph uses the same numbers. Mark a point at the top of each bar and join the points with a line.

The Ministry module also suggests that learners use a computer with a projector to draw line graphs and bar charts in Excel.

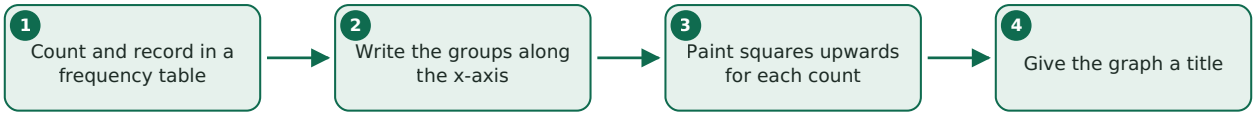


Figure 2. Steps to draw a bar graph

3 Reading a graph

To read a graph, find the group, then look at how high the bar goes. Bwalya made a bar chart of the colours of vehicles that passed her house. You can answer how many were red, how many were blue and how many were black. Add the bars to find the total, and find the shortest bar to see which colour was the least.

Banji made a line chart of her friends' favourite fruit. Find the highest point to see the fruit most liked and the lowest point to see the fruit least liked.

TRY THIS

With your group, count the animals on picture cards or the people wearing black at school. Make a frequency table, then paint a bar graph on grid paper. Tell a friend which group has the highest number.

REMEMBER

- Data is facts or numbers we collect
- A frequency table uses tally marks and a frequency
- A bar graph uses bars to show how many in each group
- A line graph joins points with a line
- Read a graph by finding the group and looking at its height

? Check yourself

1. What do we write in the three columns of a frequency table.
2. What is frequency.
3. Which axis do we write the groups on.
4. How do we find which group has the highest number on a bar graph.
5. Bwalya sits by the roadside near her house and counts vehicles by colour for her class project. Her bar chart shows red 4, blue 3 and black 5. (a) How many were black. (b) What is the total number of vehicles. (c) Which colour was the least.
6. Banji asks her friends at school about their favourite fruit and draws a line chart for the class. Mango has 7 votes, orange has 4 and banana has 6. (a) Which fruit was liked by most friends. (b) Which was least liked. (c) How many liked banana.

ANSWERS

1. The type, the tally marks and the frequency.
2. How many times something appears.
3. The x-axis.
4. Look for the tallest bar.
5. (a) 5. (b) 12. (c) Blue.
6. (a) Mango. (b) Orange. (c) 6.

Written by 25Schools to follow the Grade 4 Mathematics syllabus of the Zambian competence-based curriculum. Free for learners to read, download and share. More notes and quizzes at 25schools.com.